

# Research Investments

*People, time, and money*

**Leni Oman**

Director, Office of Research & Library Services

**Wisconsin DOT Research Peer Exchange**

Madison, WI

October 15-16, 2013



# Research Budget Allocation

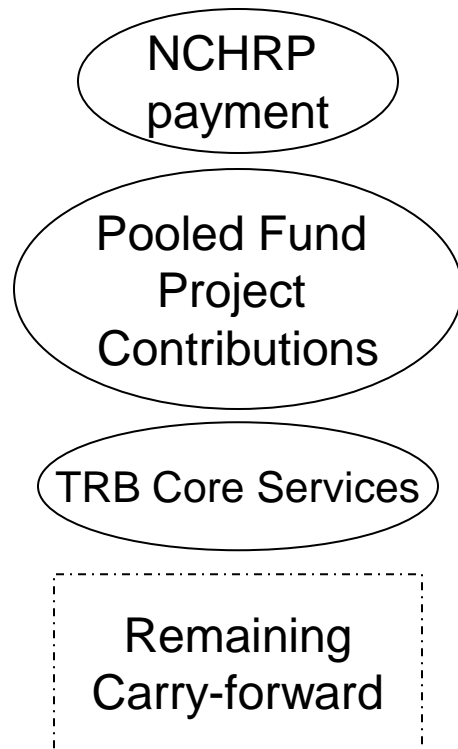
- State Planning & Research (SPR) Funding
  - SHRP2 funded “off the top”
- 25% of remaining SPR allocated for research
  - Less NCHRP Contribution (usually)
  - Less TRB Core Services
- Some additional funding came with the Library

<b>\$7,948,674 Total Fed/State 13-15 BN</b>		
3%	\$272,835	TRB Core
4%	\$300,000	WSDOT TPF
4%	\$328,000	TRAC Administration
7%	\$554,000	Library
11%	\$875,866	NCHRP
24%	\$1,920,000	Research Program Mgmnt
38%	\$3,022,000	Research Projects

# SPR Part 2 Federal Fund Management

We can and do expend 100% federal funds for some activities.

## Non-appropriated Funding (*UN-budgeted*)



## Appropriated Funding (*Budgeted*)

Federal Funds needed  
for the Appropriated  
Program are Obligated

PLUS

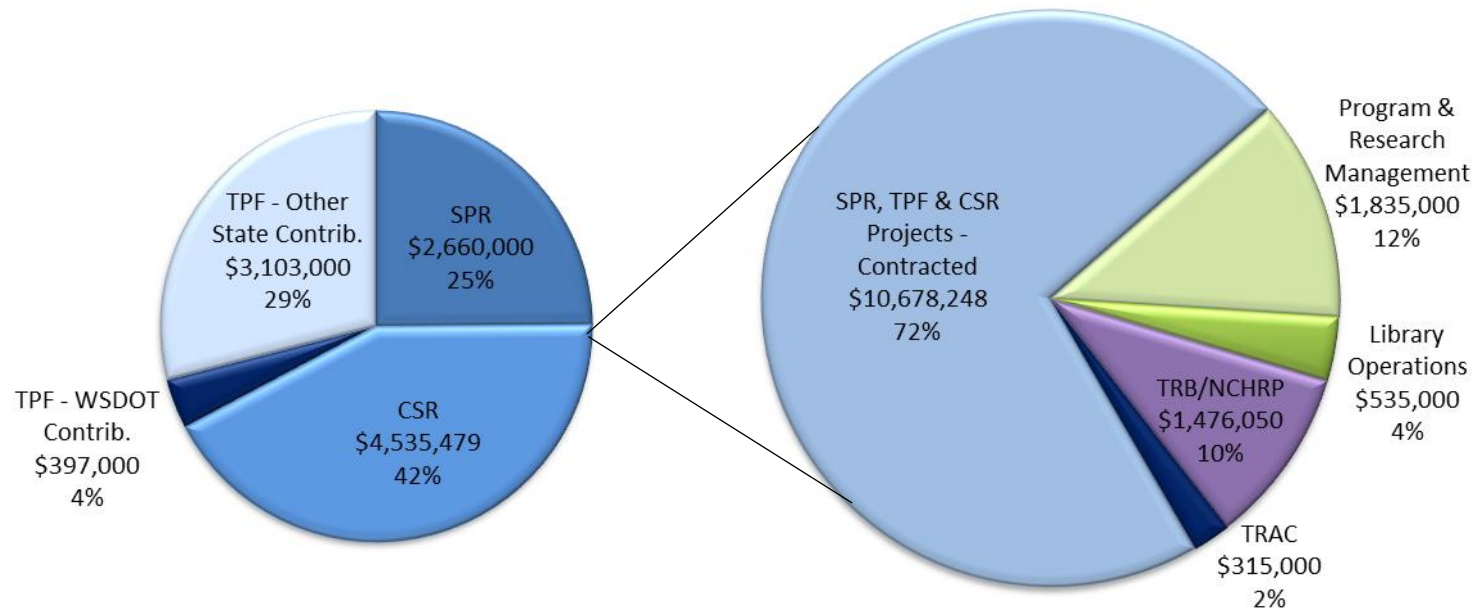
State Match

Includes:

- ORLS Staff
- Research Project Funding (SPR and Quick Response)
- Portion of Library Staff
- Library resources
- TRAC Administration

# 11-13 BN Budget & Contract Value

## \$14,839,298

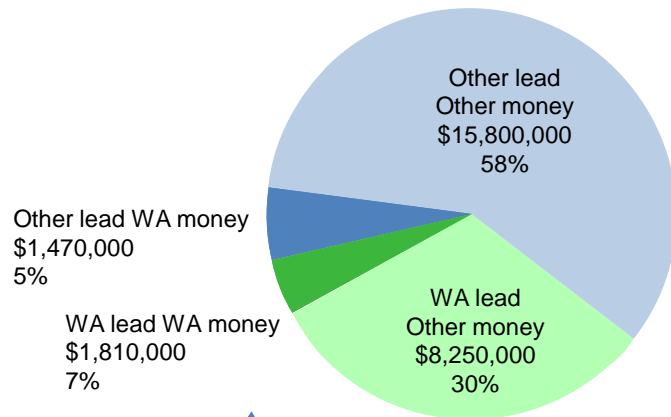


### *# of Projects completed, continued, or started*

	TOTAL	104
State Planning and Research projects	53	
Client-Sponsored research projects	43	
Transportation Pooled Fund projects, WSDOT lead	14	
Synthesis projects	16	

TRB: Transportation Research Board  
 TRAC: Washington State Transportation Center  
 NCHRP: National Cooperative Highway Research Program  
 SPR: State Planning and Research  
 TPF: Transportation Pooled Fund Program  
 CSR: Client Sponsored Research

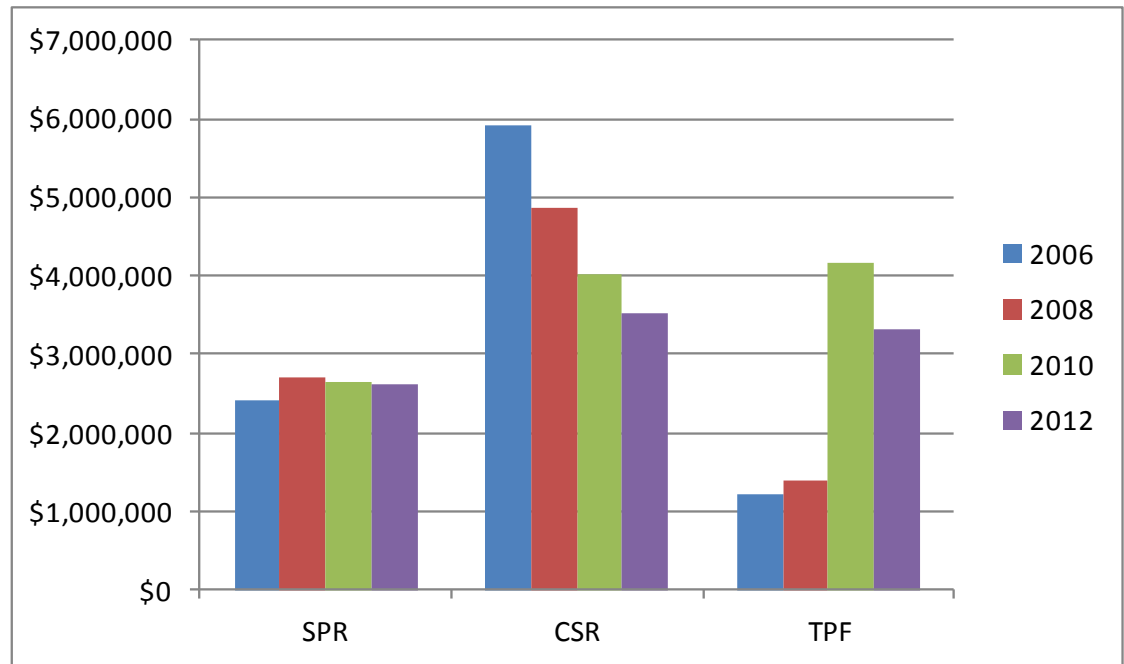
# More Budget Context



Transportation Pooled Fund  
Project Value  
by Contribution Source

Total Value \$27,330,000  
Leveraging just under \$10  
for every WSDOT dollar  
spent.

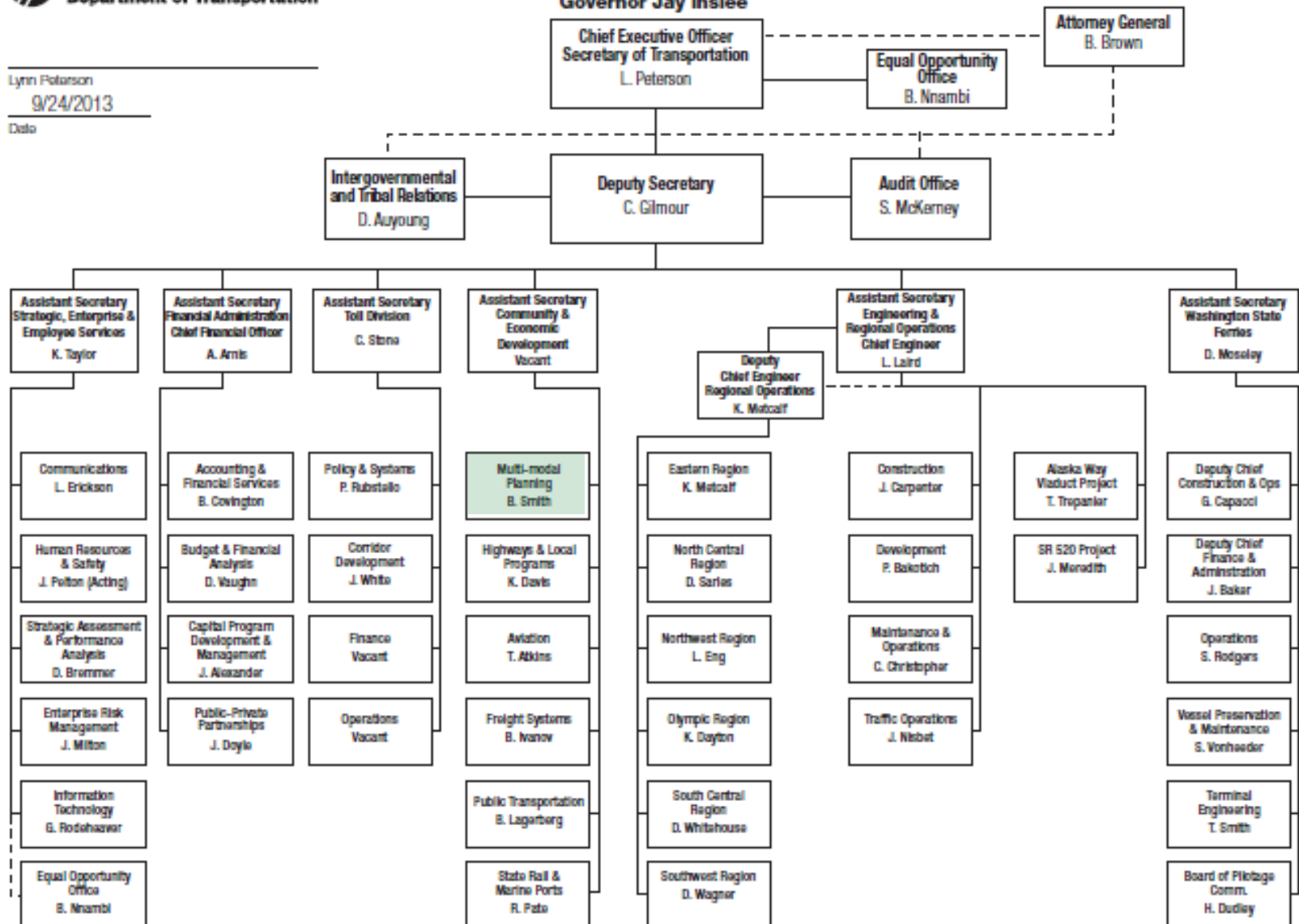
## Program Funding Trends



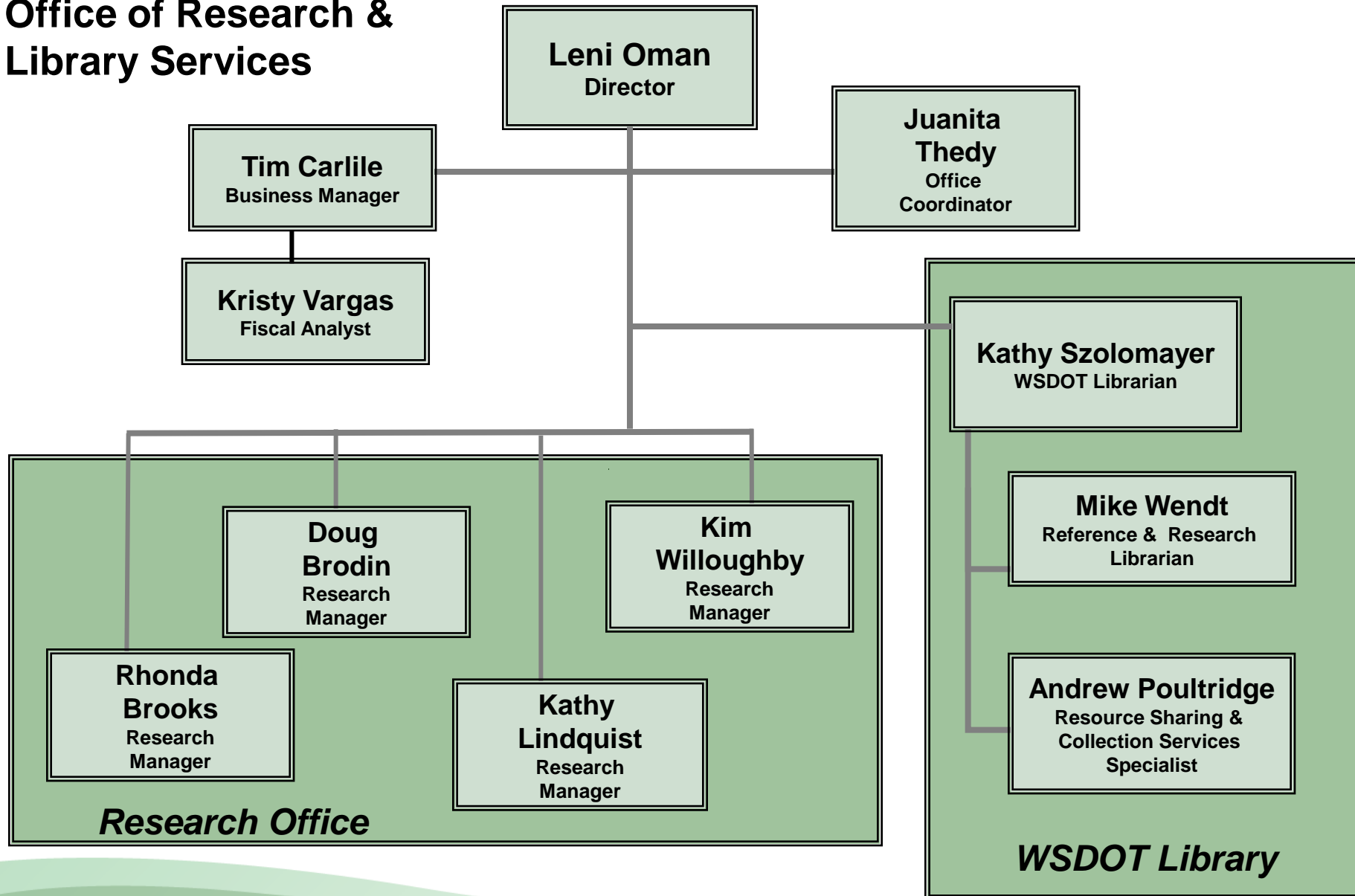
SPR: State Planning and Research  
TPF: Transportation Pooled Fund Program  
CSR: Client Sponsored Research

Lynn Peterson  
9/24/2013  
Date

**Citizens of the State of Washington  
Governor Jay Inslee**



# Office of Research & Library Services



# Division/Executive Support

- Good Executive Support
  - Secretary is interested in research, TRB, and has research ideas
  - Excellent access to executives throughout the agency
  - Attend Chief Engineer's staff meetings and Strategic Planning Division staff meetings
  - Research project involvement from all modal divisions and regions
  - Regular participation in Research Executive Committee
- Challenges
  - Time
  - Focus on tactical issues
  - Business as usual practices



# Research Executive Committee Role

REC Chair : Assistant Secretary, Engineering & Regional Operations (Chief Engineer)

Members: *Division Directors of:*

- Strategic Planning
- Capital Program Development & Management
- Development
- Construction & Materials
- Traffic
- Public Transportation
- Highways & Local Programs
- Aviation
- Ferries

- Define research goals that are the basis for project selection
- Establish the selection committees
- Approve the funded research program
- Review key research findings
- Evaluate and finalize recommendations for implementation of research findings

## Expectations still evolving

- Review of Client Sponsored Research funding
- Review of transportation pooled fund project contributions
- Identification of WSDOT objectives for national research programs
  - Problem statements submitted
  - Supporting what we submit
  - Pilot Tests and Demonstration Projects
  - Participation in national research committees and panels.

# WSDOT Participation in Transportation Research Board Organizations



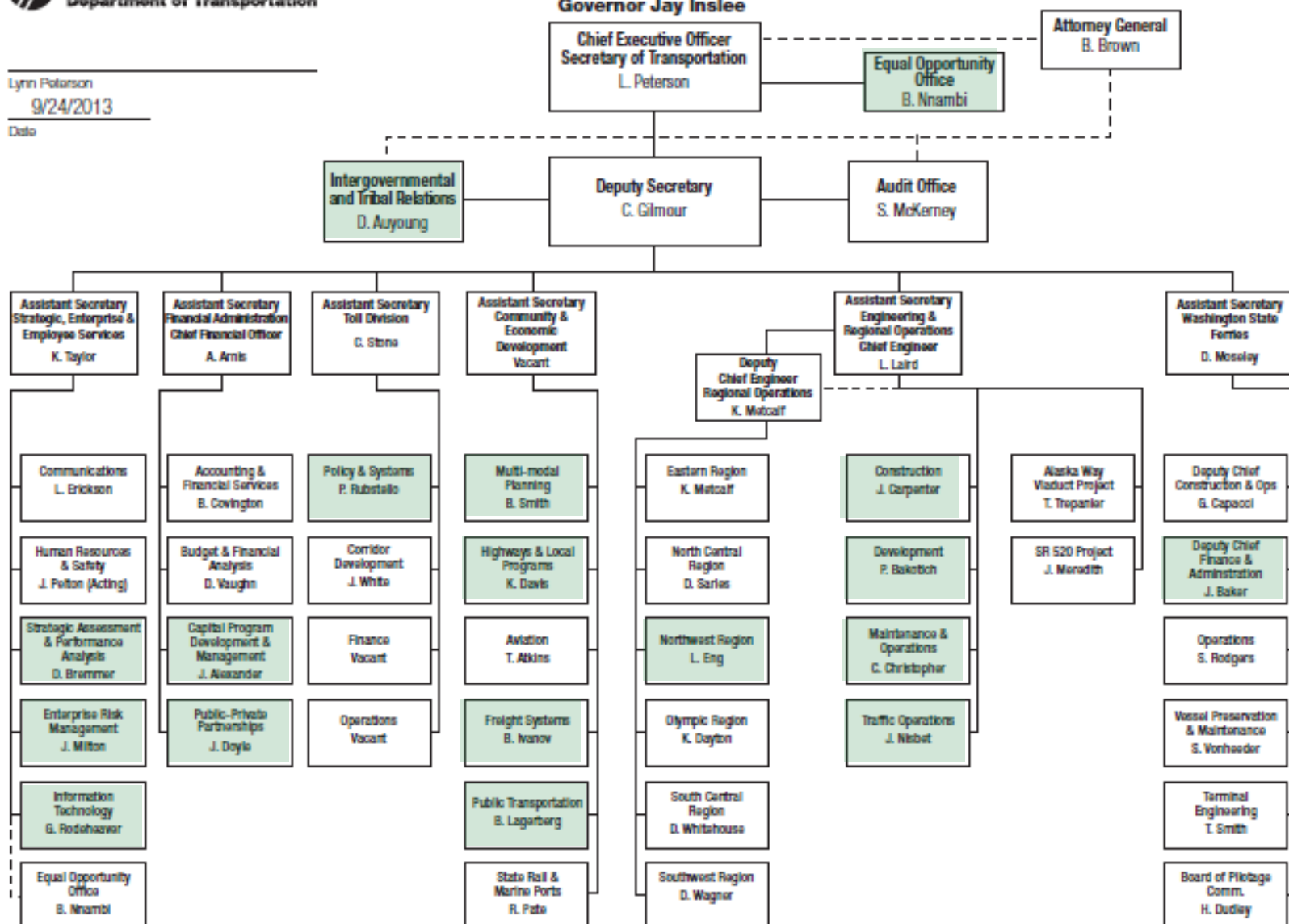
**75 unique WSDOT Employees participate in 152 committees, panels and task groups**

- 11 of the 75 employees are “senior managers”
- 18 employees Chair 24 Committees & Panels
- 4 employees serve as AASHTO Monitor on 5 panels
- 3 employees are young members
- 1 employee is Vice Chair of 1 Special Committee

Orgs with a presence on TRB committees, panels, or other groups

Lynn Peterson  
9/24/2013  
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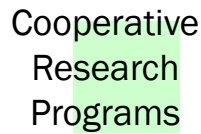
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# 75 unique WSDOT Employees participate in 152 committees, panels and task groups



- 54 Employees on 88 Cooperative Research Project panels
  - Chair 19 panels
  - 9 Senior Managers



- 35 WSDOT Employees on 52 TRB Standing Committees
  - Chair 4 committees or task forces
  - 9 Senior Managers



- 7 WSDOT Employees on 10 SHRP2 Panels
  - Chair 1 Expert Task Groups
  - 1 Senior Manager



- 4 WSDOT Employees on 5 Other TRB Committees
  - Vice-Chair of one
  - 3 Senior Managers

# Cooperative Highway Research Project Problem Statements Submitted

## NCHRP 2015

- Submitted 5 WSDOT problem statements & 2 for TRB Committees

## NCHRP 2014

- Submitted 5, 4 funded, 1 on contingency list

## NCHRP 2013

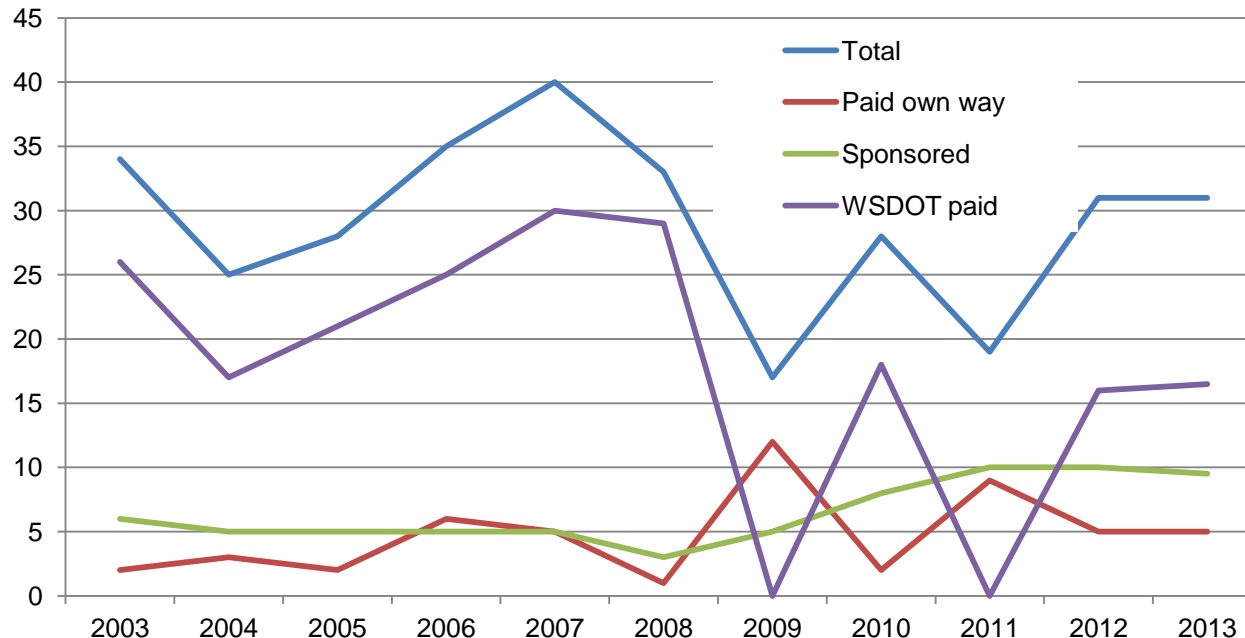
- Submitted 6, 1 funded

## NCHRP 2012

- Submitted 4, 3 funded, 1 on contingency list (later funded)

Also a participant in SHRP2 Pilot projects, implementation projects, international & domestic scans, or FHWA projects, TRB policy studies, etc.

# Attendance in the TRB Annual Meeting



## 2014 Plan

- 20 WSDOT travelers approved
- 4 known sponsored travelers

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	34	25	28	35	40	33	17	28	19	31	31
Paid own way	2	3	2	6	5	1	12	2	9	5	5
Sponsored	6	5	5	5	5	3	5	8	10	10	9.5
WSDOT paid	26	17	21	25	30	29	0	18	0	16	16.5

# Participation in National Research Programs

## AASHTO Research Programs

### AASHTO's Quick Response Research Projects

- CEO, [SCOE](#), [SCOP](#), [SCOPT](#), [SCOH](#), [SCOTS](#), [SCOHTS](#)
- Funded by NCHRP (State DOTs)

### Transportation Pooled Fund Program

- Project leadership
- Project participation

### International Scan Program

- Topic submittal
- Participation in Scan Team

### Domestic Scan Program

- Topic submittal
- Participation in Scan Team

### Technology Implementation Group

- Technology submittal

### Technical Services Programs

- [ETAP](#), [NTPEP](#), [APEL](#), [AMRL](#), [DAMS](#), [TRAC](#), [SICOP](#), [AETO](#), [SAFETY](#), [Climate Change](#), [MTAP](#), [NPHQ](#), [LRFD](#), [TSP<sup>2</sup>](#)

## Transportation Research Board Programs

### National Cooperative Highway Research Program

- Provide Funding Contribution
- Problem Statements
- Synthesis Topics
- Panel Nominations

### Airport Cooperative Research Program

- Problem Statements
- Synthesis Topics
- Panel Nominations

### Transit Cooperative Research Program

- Problem Statements
- Synthesis Topics
- Panel Nominations

### National Freight Cooperative Research Program

- Problem statements
- Panel Nominations

### National Cooperative Rail Research Program

- Problem statements
- Panel Nominations

### Marine Board

- Topic submittal

### Strategic Highway Research Program (SHRP II)

- Expert Task Group appointments
- Pilot Tests
- Demonstration Projects

### Innovations Deserving Exploratory Analysis

- Suggest promising but unproven innovations for Transit, Highways, Safety

### Commercial Truck and Bus Safety Synthesis Program (CTBSSP)

- Topic submittal

### Hazardous Materials Cooperative Research Program

- Panel nominations

### Policy Studies

- Fund a topic
- Committee nominations

### Legal Research

- Topic submittal for Highways, Transit, and Airports

Active

Semi-Active

Inactive

# ORLS Calendar

ORLS Calendar of activities

RESEARCH PROGRAMS												
	January	February	March	April	May	June	July	August	September	October	November	December
<b>Priority 1</b> Programs we work with regularly	NCHRP rating process begins	NCHRP Synthesis Topics Due	TCRP Synthesis Topics Due	ACRP Problem Statements Due	WSDOT TPF Travel Plan due	NCHRP 20-59 SCOTS Problem Statements Due	NCHRP 25-25 SCOE Problem Statements Due July 15	TRB Annual Meeting Paper Submittals Due Aug 1	WSDOT SPR Research Problem Statements Due (even year)	ACRP Synthesis topics due Oct 1	Domestic Scan proposals due Nov 15	WSDOT RFQ distributed
	NCFRP Panel nominations	WSDOT Response to RFQ Due	High Value Research Submissions	NCHRP 20-24 CEO Problem Statements Due	Nominations for NCHRP Panels	TCRP problem statements due June 15	NCHRP 20-65 SCOPT problem statements due July 1		NCHRP problem statements due Sept 15		Fall SCOR meeting (Oct, Nov, or Dec)	
		TRB committee nominations (selection is variable)		NCHRP 20-07 SCOH Problem Statements Due			TCRP Transit Legal Research needs due July 1		WSDOT problem statements due Sept 28			
				NCHRP 8-36 SCOP Problem Statements Due					NCHRP Legal Research needs due Sept 15			
<b>Priority 1, may occur anytime</b>	WSDOT Quick Response Research											
	Transportation Pooled Fund Contributions											
	SHRP2 Pilot Tests & Demonstration Projects											
	SHRP 2 Implementation											
<b>Priority 2</b> Programs we work with periodically or have opportunity to work with	WSDOT Client Sponsored Research											
	WSDOT Synthesis Requests											
	HMCPR Panel nominations			FHWA Environmental Research topic discussion?	HIL Technology Partnerships proposals due	National Cooperative Rail Research Program Due June 15	NCFRP problem statements due July 30		NCHRP 20-24 CEO Problem Statements Due			HIL Technology Partnerships proposals due
	SCOTS Panel nominations			NCFRP Panel nominations Apr 1	CTBSSP Topics Due				NCHRP 20-07 SCOH Problem Statements Due			
<b>Programs our Partners may request assistance for</b>				Multistate Corridor Operations Program					International Scan proposals due			
									WSDOT TPF contribution plan prepared			
	Federal Discretionary Programs due - includes research activities		NCHRP IDEA Due Mar 1		Transit IDEA Due May 1				NCHRP IDEA Due Sept 1	Panel selection for other CRPs		
									Safety IDEA Due Sept 15			
<b>That vary in timeline</b>	University Transportation Center proposal and match discussions											
	Every Day Counts Submittals											
<b>OTHER ACTIVITIES</b>	Exploratory Advanced Research											
	January	February	March	April	May	June	July	August	September	October	November	December
	TRB Annual Meeting		SCOR Meeting to select NCHRP projects	Universities must have offers to grad students	AASHTO Spring Meeting	TRB Executive Committee Meeting	NRAC/TRB State Representatives Meeting	TRB Annual Meeting paper submittals due August 1	TRB Annual Meeting program allocations and attendees identified	WSDOT RAC meets to develop recommended program		Even Year: REC selected SPR Research Program
	TRB Executive Committee Meeting		Verify contribution for AASHTO "Face Book"		20-07 and 20-24 projects selected	FHWA SPR Work Program Due			Verify contribution for AASHTO "Face Book"	AASHTO Annual Meeting		TRB Annual Meeting orientation
	Award due dates distributed		Update AASHTO Reference Guide		AASHTO President's Awards Due	AASHTO CEO NCHRP Ballot Due				20-07 and 20-24 projects selected		SPR Work Program update due
						TRB Annual Meeting Travel Plan (preferred timeline)				TRB Annual Meeting program commitments made		
Legislative Session					End of Fiscal Year/End of Biennium close-out							



# Nurturing Innovation

- *Innovation a culture in which ideas are valued*
- A movement, not a process
- Creating an Innovation Ecosystem
  - Governance
  - Physical environment
  - Social Media
  - Rewards & recognition
- Innovation Skills & Behaviors
  - Nature & Nurture
- Innovation versus creative chaos
- Orchestration to Make Innovation Happen
- Pushing Boundaries by Breaking the Rules

# Tips for Leaders: what to avoid

- **Treating innovation as business as usual.** Requiring the same business processes,
- **Thinking that process is enough – it's not.** It takes energy, creativity, risk taking to get out of one's comfort zone and find unique insights
- **Not linking innovation to strategy.** For innovation to get the right level of attention, funding and results, an agenda needs to be defined around what innovation really needs to deliver
- **Fishing in the same pond.** To get breakthrough innovation, it takes time to reframe and reboot. First start with principles around market definition, consumer understanding, and territories.
- **Continually chasing quick wins.** Broaden the innovation portfolio to balance it across variables (time, topic, location, level of risk....)
- **Taking on too much too soon**
- **Speaking in abstract terms.** Give people explicit permission to innovate and time to do it. Identify initiatives and get the organization focused.

# Program Outreach Activities

- Research folios
- WSDOT Research website
- Project summary document
- Gray Notebook Annual Summary
- Strategic Implementation Plan
- LTAP Newsletter
- TRAC Biennial Report
- Bulletin Board
- Viral messaging
- Project close-out presentations
- Elevator speeches
- Value of Research resource documents
- Webinars
- Briefings

## Transportation Research Special Report

### An Introduction to WSDOT's Research Program

Transportation research improves WSDOT's performance in delivering transportation projects and operating a safe and efficient transportation system. New ideas and innovations are investigated through research and used to build better roads and bridges, create a safer experience for travelers, efficiently move people and vehicles, and promote our stewardship of Washington's rich natural resources. Many aspects of transportation have benefited from research including highway construction, maintenance, pavement, structures, materials, design, hydraulics, right-of-way, environment, transit, airports, transit, traffic, and planning. WSDOT research produces knowledge and ideas to help make better decisions about transportation that benefit all of Washington's citizens.

**Making effective use of research partnerships**  
WSDOT partners with other transportation agencies, universities, national organizations, private companies, and local, state, and federal agencies to identify areas of research and

### Transportation Research Program Highlights

167 research projects completed, continued, or started during the 2007-08 biennium.

WSDOT's 2007-08 research project activities	Count
Transportation projects completed, continued, or started during the 2007-08 biennium	167
State Planning and Research funded projects	47
Grant-sponsored research projects	35
Transportation Project Fund projects	38
Student studies projects	10
Synthesis projects	21

Source: WSDOT Research Office

**Number of WSDOT research projects planned for the 2007-09 biennium**

Research projects planned for the biennium	Count
Research projects continued from previous biennium	12
Research projects started	33
Research projects completed	14
Research projects cancelled	4
Research projects on schedule	21
Research projects on budget	100%

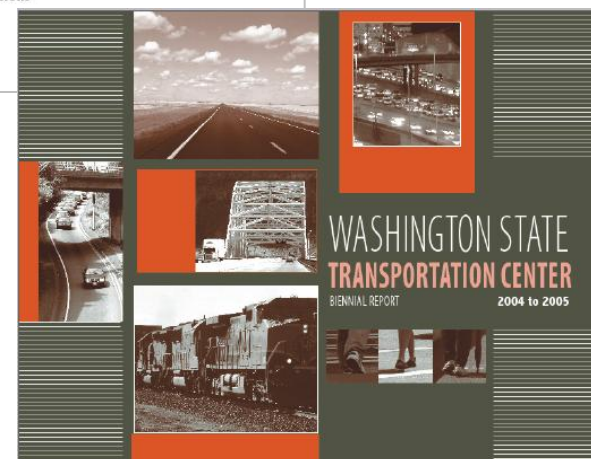
Source: WSDOT Research Office

1. 100% projects which are 100% federal/20% state funded.  
2. All on-going projects will continue into the 2009-10 biennium.

Following topics: Highways, Transit, Airports, Commercial Buses, and the Strategic Plan. Since 2000, WSDOT has helped inform the Moving Washington initiative through studies on the causes of congestion, safety, signal timing, tolling strategies, rapid construction, construction timing, and strategies to support use of HOV/HOT lanes, and transit. Research results are also helping develop a sustainable transportation system by improving the life-cycle of our roadways and minimizing the impact of our work on the environment. Through research, we are able to look toward the future and prepare for changes in transportation management."

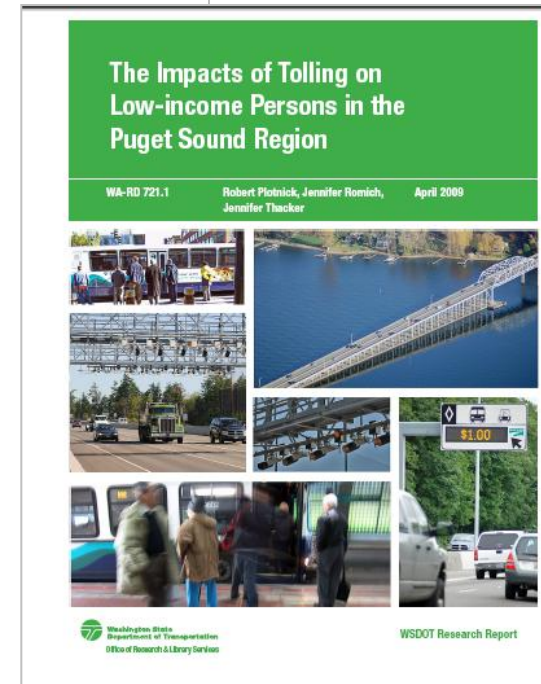
—Jerry Lund, Chief Engineer  
Assistant Secretary of Engineering and Regional Operations, WSDOT

Transportation research addresses specific problems and questions that improve the agency's ability to deliver transportation projects and operate a safe and efficient transportation system.

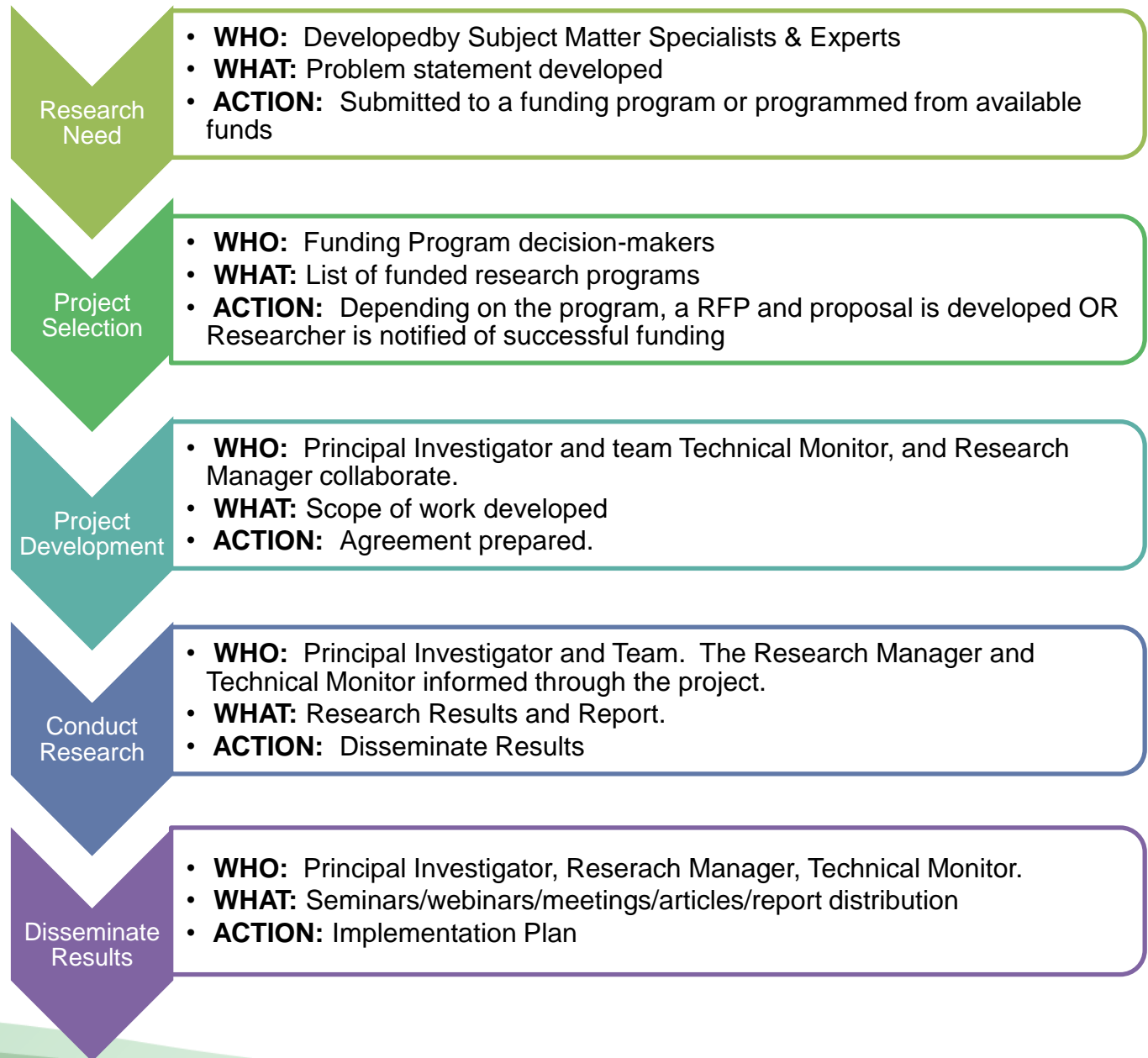


# Project Outreach Activities

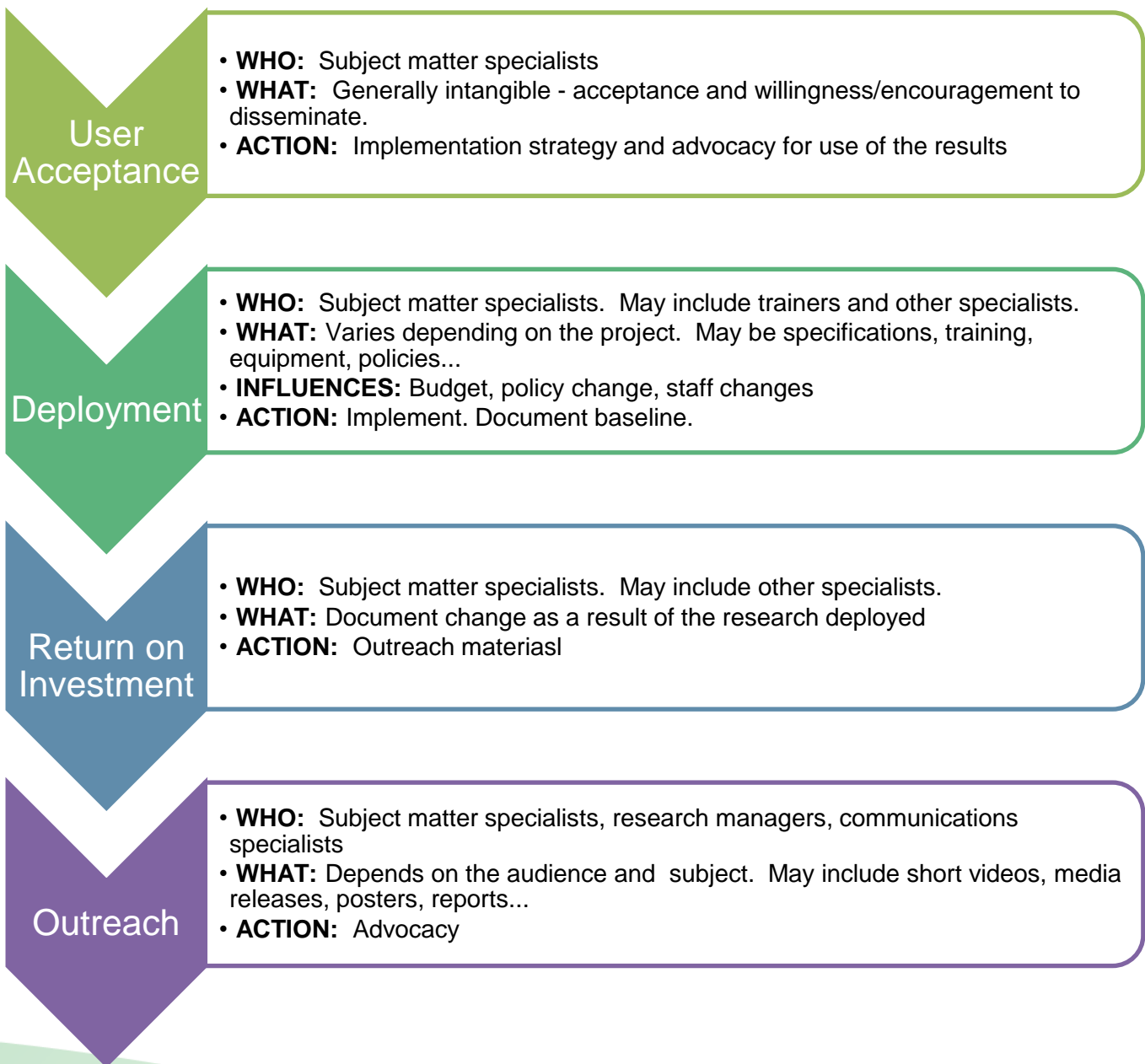
- Research Reports
- Research Notes
- Workshop/Seminars
- Webinars
- Videos
  - Hoh River and Cable Repair
- Subject Area Meetings
  - Traffic and Freight Meetings
  - Quarterly Forums
- Role of the Champion



# The Role of Research Programs in Implementation



# The Role of Technical Programs in Research Implementation



# *For More Information:*

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